

U

408.3

A1

FM 55-37

Rec'D ACer 310-40, 1965

FM 55-37

DEPARTMENT OF THE ARMY FIELD MANUAL

INFANTRY DIVISION TRANSPORTATION BATTALION AND TRANSPORTATION TACTICAL CARRIER UNITS

RETURN TO ARMY LIBRARY
ROOM 1 A 518 PENTAGON



HEADQUARTERS, DEPARTMENT OF THE ARMY
JULY 1962

FIELD MANUAL }
No. 55-37

HEADQUARTERS,
DEPARTMENT OF THE ARMY,
WASHINGTON 25, D. C., 6 July 1962

INFANTRY DIVISION TRANSPORTATION BATTALION AND TRANSPORTATION TACTICAL CARRIER UNITS

	Paragraph	Page
CHAPTER 1. GENERAL		
Purpose and scope.....	1	2
Organization and functions.....	2	2
Command relationships.....	3	3
Battalion command, staff, and logistics.....	4	4
2. STAFF TRANSPORTATION OPERATIONS		
General.....	5	5
Division transportation officer.....	6	5
Division transportation section.....	7	7
Division traffic headquarters.....	8	7
Operations.....	9	8
3. ADMINISTRATIVE-SUPPORT TRANSPORTATION		
General.....	10	9
Employment of organic transportation.....	11	9
Employment of attached transportation.....	12	10
Communications.....	13	10
4. MOTORIZED OPERATIONS		
General.....	14	11
Responsibilities.....	15	11
Command and control.....	16	11
Communications.....	17	12
Techniques and procedures.....	18	12
Maintenance.....	19	13
Training.....	20	14
5. MECHANIZED OPERATIONS		
General.....	21	15
Capabilities and limitations.....	22	15
Task or mission assignment.....	23	16
Command and control.....	24	17
Communications.....	25	17
Supply and maintenance.....	26	18
Training.....	27	19
6. TRANSPORTATION TACTICAL CARRIER UNITS		
General.....	28	23
Organization and mission.....	29	23
Employment.....	30	24
Communications.....	31	24
Supply and maintenance.....	32	24
Training.....	33	25
APPENDIX. REFERENCES.....	--	26

* This manual supersedes FM 55-37, 3 July 1957.

CHAPTER 1

GENERAL

1. Purpose and Scope

a. This manual will serve as a guide for personnel of the infantry division transportation battalion in training for and performing normal functional operations. Material pertaining to the organization, training, and employment of transportation tactical carrier units is included in this manual since these units serve primarily to reinforce the infantry division and normally operate in the same manner as the organic armored carrier companies. This manual will familiarize staff personnel and supported commanders with the inherent capabilities and limitations of these organizations in order to promote maximum effective utilization.

b. Principles of operation in all functions of the battalion are explained, but operational techniques and procedures are not prescribed in detail. Modern warfare, both nuclear and nonnuclear, requires great adaptability to rapidly changing conditions. Detailed descriptions of organization, equipment, and duties of personnel are beyond the scope of this manual. Organization, equipment, and assignment of personnel by military occupational specialty are adequately covered in current tables of organization and equipment, which should be used in conjunction with this manual.

c. The material presented herein is applicable to both nuclear and nonnuclear warfare.

d. Users of this manual are encouraged to submit recommended changes or comments to improve the manual. Comments should be keyed to the specific page, paragraph, and line of the text in which the change is recommended. Reasons should be provided for each comment to insure understanding and complete evaluation. Comments should be forwarded direct to the Commandant, U.S. Army Transportation School, Fort Eustis, Va.

2. Organization and Functions

The infantry division transportation battalion is organized and equipped to perform all Transportation Corps functions of the division. These functions include staff transportation operations, administrative-support transportation, motorized operations, and mechanized operations. The battalion organization includes a headquarters and headquarters company, a truck transport company, and two armored carrier companies.

a. The headquarters and headquarters company provides command and administration for assigned and attached units. Its organization includes a battalion headquarters, a company headquarters, five functional sections, and a maintenance platoon. The five functional sec-

tions (operations and intelligence, administration, supply, communications, and division transportation) provide personnel and equipment for the control of task elements, personnel activities, supply of the battalion, battalion communications, and division staff transportation functions.

b. The organization of the truck transport company provides wheeled vehicles and the necessary operating personnel for administrative-support transportation and motorized operations of the division. This company represents the wheeled-transport vehicle pool of the division. Command, control, administrative, and supply personnel are provided in the company headquarters. Vehicle maintenance support is given to the company by the truck maintenance section of the maintenance platoon, headquarters and headquarters company.

c. The two armored carrier companies provide tracked, lightly armored vehicles and operating personnel for the protected tactical mobility of infantry units in mechanized operations. These vehicles may also be used logistically when the situation requires the delivery of supplies, equipment, or replacement personnel to engaged units or through contaminated areas where protection and a high degree of cross-country mobility are demanded. Company command, control, and supply personnel are included in the company headquarters. Maintenance personnel and equipment for the armored carrier companies are found in the battalion maintenance platoon.

3. Command Relationships

Because of the variety of the missions and the functions of the infantry division transportation battalion, some modification of normally accepted command channels is necessary. The division trains commander is responsible for the tactical activities of technical service troops operating in the trains area and is thus also responsible for training these elements in combat, movement, and security to insure adequate coordinated defense of administrative and logistical units. This command function does not, however, extend to control of technical operations. In actual operation, the transportation battalion normally will be divided: the division transportation section operating in the division logistics control center (DLCC) located adjacent to the trains command post, combat-support elements operating either with their supported units or in a forward reserve position, and the remainder of the battalion operating from the division trains area but separated from the trains command post. The staff operations performed by the division transportation section will come under the general staff supervision of G3 or G4, depending upon the nature of the operations. Assumption of a direct combat-support mission shifts command of attached transportation units to the commander of the supported infantry unit. Elements of the battalion operating in division rear from the trains area will be under the tactical command

and control of the division trains commander. For further discussion of the duties and responsibilities of the division trains commander and the operation of division trains, see FM 7-100.

4. Battalion Command, Staff, and Logistics

Personnel and equipment in the headquarters and headquarters company are provided to assist the battalion commander in his dual role and to give administrative and logistical support to task elements of the battalion. The battalion headquarters and headquarters company normally is located in the division trains area. Here the battalion commander, or, in his absence, the battalion executive, assisted by the operations and intelligence section, directs the operations of organic and attached transportation task units. Here also the supply section and the maintenance platoon plan and perform most of their tasks in support of transportation operations. The diversified and dispersed missions of task units complicate the problems of supply and maintenance. Task vehicles must be adequately supplied with POL and provision must be made for timely resupply; combat support missions may require additional ammunition for automatic weapons; and arrangements must be made for the messing of operating personnel. The maintenance platoon must plan effective maintenance support for both wheeled and tracked vehicles, including prompt evacuation and replacement of disabled vehicles. To facilitate this support, the platoon is organized in maintenance sections with a primary support responsibility assigned to each. These sections may accompany their supported units in tactical operations. The communications section of the headquarters company provides radio and wire communications, organizes and controls communications within the battalion, provides the battalion station in the division net, and maintains and repairs signal equipment to the limit of its capabilities. The battalion administration section handles routine administrative and personnel matters not referred to the division administration company.

CHAPTER 2

STAFF TRANSPORTATION OPERATIONS

5. General

The majority of transportation planning, coordination, and control activities within the division are included in staff transportation operations. The preparation of plans and estimates for the transportation of the division by any or all modes to any destination in the most effective manner may be a decisive factor in modern warfare. The adequate logistical support of the division is largely dependent upon accurate determination of requirements, prompt and realistic assignment of tasks to available transportation, and proper coordination and control. Staff transportation personnel receive and analyze requirements for transportation; correlate this information with availability reports; and prepare the necessary plans, estimates, and orders to effect timely and efficient utilization of means. To insure coordination, liaison must be maintained with transportation agencies of higher and adjacent headquarters and of applicable Navy, Air Force, and Allied commands and with civilian transportation agencies. The staff transportation function also includes the collection, evaluation, and dissemination of transportation technical intelligence and the preparation and maintenance of all records, studies, graphs, and plans pertaining to the employment of transportation within the division.

6. Division Transportation Officer

The division transportation officer is a special staff officer and is responsible for keeping the division commander and his staff informed on transportation matters. In addition to his staff duties, the division transportation officer commands the transportation battalion and its attached transportation units. The staff duties and responsibilities of the transportation officer, applicable to commands in general, are outlined in FM 101-5. At division level the transportation officer is primarily concerned with the following special staff functions:

a. *Preparation of Detailed Plans for Movement of Troops and Equipment by All Means of Transport.* The strategic and tactical mobility of the division must be insured by careful planning for its movement by land, sea, and air. These plans will include approved loading plans for each element of the division. Specific requirements for transportation will be developed, utilizing means organic to the division and/or supporting transportation agencies. Training programs should include troop loading and movement as an important element of unit training. Staff supervision of this training is a responsibility of the transportation officer in coordination with G3 and G4.

b. Establishment and Operation of the Division Transportation Service. The division transportation service is based primarily on the motor-transport means organic to the transportation battalion. The establishment of this service includes the planning and coordination necessary to provide optimum utilization of all transport means within the division under varying conditions. Transport vehicles organic to other divisional units should be considered in these plans, although their use for general transportation support may be limited to emergencies. The division transportation service supports the division tactically and administratively. Plans pertaining to the operation of this service will be based upon the employment of the division and its subordinate and attached units as a combat organization. Tactical requirements for transportation support in various types of situations should be predetermined so far as possible to allow development of plans for transport utilization. Administrative support plans should be developed in a similar manner. Tactical and administrative support plans will be coordinated with the division G3 and G4 to insure effective support by the division transportation service.

c. Preparation of Emergency Transportation Plans. The division transportation officer is responsible for the preparation of plans to support the division with other than organic transportation in emergencies. In any situation where requirements cannot be met by division transportation, additional support must be requested from higher headquarters. Prior planning at division level will assure the timely submission of accurate requirements and thus expedite the necessary support. Plans for transportation attachments should provide for administration and supply, as well as for operations, of attached units as required by the nature and length of the attachment.

d. Development of Plans and Orders Pertaining to Road Movement. This function includes the preparation of the division traffic circulation plan, the transportation portion of the administrative plan or order, portions of operation orders for road movement, and plans and orders for highway regulation. Planning responsibilities include the preparation of pertinent sections of the division SOP. The division traffic headquarters is formed to assist in the performance of this function.

e. Staff Supervision of Division Transportation Activities. The division transportation officer exercises technical supervision over all transportation activities within the division. Although most of these supervisory duties pertain to the operation of the transportation battalion and would thus be inseparable from his command responsibility, the division transportation officer through traffic headquarters, should insure coordination of movement plans and orders to minimize congestion and to promote the most effective use of the highway net within the division area.

f. Liaison. The division transportation officer must maintain liaison with transportation agencies of higher headquarters and of sup-

porting Navy, Air Force, and Allied commands; with civilian transportation agencies, as appropriate; and with general and special staff sections of the division. The importance of this function cannot be overemphasized since good liaison saves time, prevents misunderstanding and confusion, and reduces duplication of effort. The added transportation combat support requirements in the infantry division demand direct liaison between the transportation officer and G3 without reducing the need for continued liaison with G4 for logistical support.

g. Technical Supervision of Aircraft Supply and Maintenance. The division transportation officer provides technical supervision over the supply and maintenance activities of the infantry division aviation company and its attached transportation aircraft maintenance detachment. The performance of this technical supervision through the rated aircraft maintenance officer in the division transportation section enables the transportation officer to advise the commanding general and G4 on the status of aircraft maintenance and the daily operational status of division aircraft; to prepare and submit maintenance reports as requested; to evaluate the efficiency and effectiveness of aircraft maintenance within the division; to insure the prompt implementation of modifications and technical orders; and to expedite requisition and supply through technical channel liaison.

7. Division Transportation Section

The division transportation section, included in the TOE of the transportation battalion headquarters and headquarters company, is provided to assist the battalion commander in the discharge of his staff transportation responsibilities. Officers and enlisted personnel assigned to this section must be specifically qualified to perform the duties required. The officer in charge of this section acts as assistant to the division transportation officer and acts in his name on all routine staff transportation matters. This section gathers and evaluates transportation information; plans for the efficient movement of supplies and personnel; prepares plans and orders to implement transportation operations based upon requirements formulated by G3 and G4; and keeps the division transportation officer, division commander, and staff informed on the transportation situation. Within the limitations imposed by TOE authorization of personnel, the division transportation section also provides the nucleus for the division traffic headquarters. An officer of the section is detailed to serve as traffic officer and is charged with the actual operation of the traffic headquarters.

8. Division Traffic Headquarters

The mission of the traffic headquarters is to plan, schedule, route, and direct the actual use of highways to meet military operational requirements and to provide an organization for the resolution of day-

to-day problems of highway regulation and traffic control. Although the division transportation officer has direct responsibility for the operation of the traffic headquarters, other special staff sections have certain functions of varying importance depending upon the situation. These include the provost marshal for traffic control, highway information, and enforcement of traffic regulations; the engineer for signing, construction, maintenance, and classification of highways; the signal officer for communications; the ordnance officer for vehicle evacuation; and the medical officer for medical evacuation. Representatives of these special staff sections should be available for duty in traffic headquarters as required, but even if no representatives are available, liaison between the traffic headquarters and appropriate staff sections will be maintained to insure coordination in fields of primary staff responsibility.

9. Operations

Staff transportation operations normally are conducted by the division transportation section at the division logistical control center (DLCC) to expedite coordination of administrative support of the division. Contact is maintained with the battalion operations and intelligence section through organic battalion communications facilities or division area communications facilities, when necessary. Through this liaison with battalion headquarters, the staff transportation section is kept informed on vehicle availability, transportation information secured by elements of the battalion, and any operational problems that may arise. The battalion is also kept informed of division plans involving future requirements and of other items that may affect current or future operations.

CHAPTER 3

ADMINISTRATIVE-SUPPORT TRANSPORTATION

10. General

Administrative-support transportation in the infantry division is based upon the principle of pooling motor transport vehicles. Pooling motor transport at the division level gives the commander a high degree of flexibility and maximum effectiveness with a minimum number of vehicles. To maintain this flexibility and effectiveness, the transportation officer and his staff must plan realistically, and all operational plans must be based on accurate current information. The daily requirements of the division for logistical support vary widely from less than 100 tons to nearly 500 tons, depending upon the situation and type of operation. The lack of experience factors for nuclear warfare makes long-range planning for administrative transportation difficult, though the conclusion may be reasonably drawn that the dispersion demanded by employment of nuclear weapons will not simplify the problem.

11. Employment of Organic Transportation

Although the term organic transportation includes all motor-transport vehicles within the division, the division transportation officer is primarily concerned with the trucks and trailers of the truck transport company. These vehicles and their operating personnel provide all administrative support transportation normally required by the division. However, the transportation officer receives daily vehicle availability reports on motor-transport cargo vehicles from all units of the division. Thus in any emergency where the requirements exceed the capability of the truck transport company, data on the total transport capability of the division are immediately available. Transportation requirements received by the division transportation section are analyzed and translated into terms of vehicles and/or motor transport units. Task vehicles required normally are dispatched on a specific mission basis and revert to the company on completion of the mission. Routine missions, such as distribution of Class I supplies, may be governed by a battalion or division SOP. Requirements should be submitted in terms of bulk and tonnage to insure maximum flexibility and economy in vehicle utilization. Requests for transportation should also specify the time and place to report and the destination and type of cargo. The time of reporting should be realistically stated to preclude long waiting periods, which tend to defeat the purposes of pooling.

12. Employment of Attached Transportation

Transportation truck units may be attached to the division to meet requirements beyond the capabilities of organic transport. These units normally will be attached to the transportation battalion. Utilization of this additional transportation will follow the principles outlined for organic transport. Unit integrity will be maintained so far as possible in assigning missions to attached units. Provision must be made for their administrative and maintenance support. Normally such units will have organic personnel, supply, and maintenance capabilities. Further augmentation is seldom required. Commanders and key personnel of these units should be briefed upon attachment. This briefing should include familiarization with battalion and division SOP's, as applicable; the geography of the division area, including the available road net, main supply routes, distinguishing landmarks, and critical points or areas; and the current situation, including the location of elements of the division. Integration and identification of attached units with the transportation battalion, regardless of the duration of the attachment, facilitates command and control and promotes better utilization of transportation.

13. Communications

In logistical support operations, the truck transport company utilizes both radio and wire communications. Communications equipment organic to the company is limited in range and quantity. The company organizes and operates its own internal radio net and maintains its station in the battalion net, but units smaller than the platoon when dispatched on independent missions must communicate by other means. The area signal communications system, provided by the division and extending that of the field army, offers adequate reporting facilities. Operating personnel of the company should be familiar with these facilities, their location, and their use.

CHAPTER 4

MOTORIZED OPERATIONS

14. General

Maximum tactical mobility is essential to success in modern warfare. Motorized operations, though usually limited to movement beyond the range of small arms and to areas not subject to the effects of observed artillery fire, play an important part in maneuvering foot elements of the infantry division. The ability to strike the enemy at widely separated, lightly defended points within a short span of time enables the commander to amplify the combat effectiveness of his force. Motorization, the use of unarmored wheeled vehicles for the transportation of combat units, gives the commander this capability. The infantry division commander has the tools for partial motorization in the truck transport company. Complete motorization is possible only through truck transport attachments by higher headquarters.

15. Responsibilities

General staff responsibility for the tactical movement of combat units rests with G3. Motorized operations are planned by G3 in coordination with the division transportation officer who, as transportation battalion commander, bears the responsibility of supplying the required motor transport. In his special staff role, he determines the organic capability of the division to support the operation and, when necessary, requests additional transportation by attachment from higher headquarters. The transportation officer also assists the G3 in recommending routes and arranging for unimpeded movement over the selected routes. Traffic headquarters is responsible for the planning and coordination of necessary highway regulation and control. Further guidance is contained in FM 7-100.

16. Command and Control

a. The commander of the supported unit commands truck transport supporting motorized operations since movement is an essential element of the tactics of his force. The supporting transportation commander may command and control the motor transport when it is not actually engaged in moving troops. Command policies for tactical movements are outlined in FM 25-10.

b. The control of motorized operations is essentially a function of the supported commander. Control problems, as well as the importance of their solution, are increased as the mobility and dispersion of the unit increases. The success of motorized operations depends upon the ability of the command to arrive in the critical tactical area

at the proper time with troops and equipment ready for combat. All available facilities for control are employed to prevent delays and confusion. March discipline must be properly observed at all echelons, and adequate supervision must be provided. Operating personnel of the support transportation should be integrated with the task force as completely as time permits through prior training with the supported unit, familiarization with the operation order, and briefing on routes.

c. The transportation commander will provide technical advice to the supported commander. When the size, complexity, duration, or independence of the mission warrants, transportation staff augmentation may be furnished the supported commander by the transportation battalion.

17. Communications

Adequate communications are essential to command and control of all operations. Motorized operations, with their basic characteristics of mobility and dispersion, accent this need. The motorization of a mobile reserve in an infantry attack is based upon the responsiveness of such a force to the will of the commander, and thus the degree of its success is dependent upon the efficiency of its communications. This dependency is equally evident in all motorized operations. The division signal officer has staff responsibility for planning, coordinating, and supervising communications and, as the signal battalion commander, provides essential area communications facilities. Signal personnel assigned or attached to combat elements insure adequate communications support. Transportation personnel supporting infantry elements coordinate their communications with the communications officer of the supported unit, as well as with the transportation battalion communications officer.

18. Techniques and Procedures

To facilitate the motorization of foot elements of the division in operations demanding a high degree of mobility, the transportation battalion must develop, and become proficient in, techniques and procedures tailored to the tactical SOP of the division and designed to achieve maximum economy through pooling. These procedures must be developed through the coordinated efforts of supporting and supported elements to insure smooth functioning under combat conditions. The resultant SOP for motorization—developed, tested, and rehearsed in training and field exercises—will include all pertinent procedures without limiting operational flexibility.

a. The motorization of selected foot elements of the division may be required in a variety of situations. In the attack, the division plan may direct the motorization of the reserve to achieve and preserve maximum momentum. When a mechanized penetration is accomplished, followup and supporting elements normally are motorized to

provide the commander with a force of balanced mobility and flexibility. Motorized elements are also employed in the advance to contact, both to provide mobile security forces and to insure maximum flexibility in rapidly developing situations. Defensive operations in modern fluid warfare also require a high degree of mobility for selected elements. Although wheeled transport vehicles are not combat vehicles, motorization plays an important combat role in moving rifle units to critical positions with speed and efficiency. In order to support motorized elements in these operations, transportation commanders involved should be completely familiar with tactical concepts described in FM 7-100.

b. The doctrine of transportation pooling, to be both effective and economical, should be consistently followed at all echelons. This doctrine prescribes the pooling of vehicles at the highest echelon practicable to provide centralized control and maximum vehicle utilization. The assignment of a combat support mission to a truck transport unit provides a transport vehicle pool for the supported unit commander. Operational techniques of supporting truck transport thus follow the normal command and control pattern. At all times during the attachment, the supported commander has operational command and control over the attached transportation. However, when not actually engaged in the transportation of troops, the transportation unit should come under the direct command and control of the transportation commander as a subordinate unit. The transportation commander may thus insure proper security and maintenance for his vehicles, as well as control of his drivers, while the supported infantry is actively engaged in combat. Through adequate, prearranged communications, the motor transport support remains responsive to the supported commander.

c. Techniques and procedures to facilitate attachment and detachment should be incorporated in the transportation SOP. Maximum unit integrity should be maintained in supplying vehicles for motorized operations in order to provide adequate command and control en route to and from the supported unit.

19. Maintenance

Although normal maintenance procedures prescribed by TM 38-750 and technical manuals specifically pertaining to items of equipment will be followed, motorized support operations will require some modification in maintenance to insure tactical success. In combat operations, first echelon maintenance must be efficient and constant. The vehicle driver must take every opportunity to inspect his vehicle, make authorized adjustments, and report the first indication of any malfunctioning. He must be thoroughly impressed with this responsibility. Command and supervisory personnel must insure maximum vehicle availability at the time and place required through inspection

and supervision. Maintenance support teams from the battalion maintenance platoon may supplement driver maintenance in the field, accompanying the transport unit on its mission, when justified by the period of attachment or by distance. By the accomplishment of minor replacement and repair during the brief periods of motor inactivity that characterize these operations, the vehicle availability for critical periods may be markedly increased. Supply and evacuation procedures will be prescribed in orders or by SOP.

20. Training

The training of the truck transport company specifically directed to the support of motorized operations will be in addition to, rather than instead of, that given personnel of nondivisional truck companies. This training should include additional individual training and unit training in conjunction with normally supported infantry units. The individual training should include map and terrain exercises, further driving under difficult conditions, additional mechanical training, and infantry tactics. Unit training for the support of infantry motorized operations should include all phases of motorized support as outlined above. Since training in these operations involves necessary coordination between supported and supporting elements, arrangements should be made through the division G3 to train infantry and truck transport personnel concurrently.

CHAPTER 5

MECHANIZED OPERATIONS

21. General

Modern concepts of warfare are based upon an increasingly fluid battlefield. The rigidity of fixed defenses invites the shattering blows of nuclear weapons. Wide dispersion offers a minimum of lucrative targets; however, dispersion lessens offensive power unless it is compensated by increased mobility. A highly mobile force with good communications may be concentrated to apply maximum combat power at the point of decision and again dispersed to prevent its destruction by a nuclear weapon. In the current organization of the infantry division, motorized and mechanized mobility for foot elements is supplied by the transportation battalion. Motorization of infantry elements is accomplished by employing the task vehicles of organic or attached truck transport. Motorization, however, solves only a transportation problem. The two armored carrier companies provide the commander with the means to mechanize selected foot elements, giving them protected combat mobility. To provide the division with this combat mobility within the limits dictated by principles of economy, armored carriers are pooled at division level and are assigned missions on the basis of specific tactical requirements. Efficient command, control, and communications, as well as thorough training, are essential to meet the vital need for prompt response to the will of the commander in providing effective support in mechanization.

22. Capabilities and Limitations

By definition, mechanization differs from motorization. This distinction must be recognized to exploit the advantages of each with due regard to their respective limitations. Mechanization provides vehicles with armor protection and armament. The combat capabilities and limitations of these vehicles are based upon their design characteristics and the tactics, training, and weaponry of opposing forces. Technological advances have improved the protection offered the crews, greatly increased battlefield mobility, and increased mechanical reliability. The armored carriers of the transportation battalion now offer the infantry commander the means to mount a mobile combat force with protection from small-arms fire and artillery air bursts and with the means to cross water obstacles and contaminated areas. These vehicles are, however, not invulnerable. Limited armor protection, size, and silhouette of these vehicles combine to make them a lucrative target for antimechanized weapons of all calibers. The limited vision of both driver and vehicle commander while operating with closed hatches restricts speed and control under battle

conditions. Slow water speeds, though somewhat offset by low free-board, restrict water operation under fire. All personnel involved in mechanized operations must be conscious of these limitations.

23. Task or Mission Assignment

a. Commitment. Centralized control of carriers at division level enables the commander to tailor their employment to fit his tactical plan. Carrier companies normally are attached to infantry battle groups for a specific period of time or on a mission basis by the division operation order, although platoons or squads may be attached separately to fill lesser requirements. Carrier units will seldom be uncommitted when the division is engaged, and close coordination between G3 and the transportation battalion commander is therefore required.

b. Liaison. The consistent maintenance of good liaison is a prerequisite for successful support in all military operations. The limited number of carriers organic to the division and the urgency normal to mobile operations underline this requirement. The division transportation section must know the support requirements of tactical plans as soon as possible, have current vehicle status information, and keep the battalion commander informed on tactical developments. The battalion operations and intelligence section is an important link between the carrier companies and higher echelons. This section must maintain close liaison with both to insure timely and accurate transmission of pertinent information. Carrier unit commanders establish liaison with supported units immediately upon attachment. Unit SOP should provide for all routine liaison procedures.

c. Location of Uncommitted Carrier Units. The depth of the division area normally precludes the positioning of carrier units in the division trains area during active operations. The time required to complete attachment is a critical element in a fast-moving situation and must be reduced to the absolute minimum compatible with security, communications, and the tactical situation. The selection of locations for the carrier units will be based upon the terrain; the nature of division operations; and the tactics and capabilities of the enemy, including guerrilla operations, partisan activities, and nuclear capabilities.

d. Communications. Communications facilitate attachment, detachment, and redeployment of carrier units following a pattern similar to that outlined for liaison. The establishment of adequate divisional radio and wire communications utilizing organic facilities is a function of the division signal officer. The battalion communications officer coordinates the battalion communications with the division signal officer and also insures communications means to meet battalion requirements. Coordination of carrier unit communications with those of their supported units must also be effected on initial

liaison with the supported unit, if this has not already been done by SOP developed during periods of combined training.

e. Training. Training in the mechanics of attachment insures the development of workable techniques and procedures. Actual assignment of missions in training exercises provides personnel at all echelons, both supported and supporting, the opportunity to rehearse their respective roles and to solve problems that arise in the detailed execution of these operations. Repetition of these exercises using proven procedures assures smooth functioning under combat conditions.

24. Command and Control

The command of armored carrier units passes from the transportation battalion to the tactical commander upon attachment. Armored carriers and their operating personnel are directly integrated with the infantry combat force for the duration of the assigned mission. Their employment is a command responsibility of the supported commander although he may employ the commander of the attached transportation as a special staff adviser, a subordinate commander, or a combination of both. Maximum unit integrity in the carrier elements must be preserved, however, since normal support missions are of limited duration and the mechanics of detachment and redeployment demand that reconstitution of the transportation chain of command can be made without delay or confusion. The command implications involved in attachment and detachment must be clearly understood by all personnel of the transportation and infantry elements. Neither optimum support nor proper vehicle utilization can be achieved without mutual understanding. Combined training, with carrier units habitually supporting specific infantry units, will encourage mutual understanding and cooperation. At times when foot troops are actually being transported by carriers, the carriers will be individually commanded by the senior infantry commander in the carrier.

25. Communications

Requirements for communications increase as the mobility and dispersion of organizations increase. With the attachment of armored carriers to infantry elements, the resultant mobility requires additional communication means to preserve command and control. Current TOE of carrier units provide these additional means by vehicle-mounted radio equipment in each carrier and $\frac{1}{4}$ -ton command vehicles of the company. These radios are compatible with infantry organic signal equipment and are utilized by the infantry commander in mechanized operations. Coordination of the employment of all organic communications within the division is essential to effective command and control. This coordination is effected by the following personnel:

a. *Division Signal Officer.* The responsibility for providing a responsive, flexible, and reliable signal system to keep pace with the rapidly changing situations of mobile warfare is assigned to the division signal officer. The signal battalion provides the communications means and personnel to form and operate an area signal communications network. The flexible area system concept is based upon a series of mobile signal centers, each supporting designated areas and units. Radio relay links tie these centers together. Switching centers provide facilities for integration of radio and wire systems. The area signal communications system is never static under combat conditions, changing continuously to support both current disposition of units and plans for future movement. The organization of the signal battalion provides a signal center for each battle group as well as for each major command post within the division. These signal centers or switch points are so interconnected by multichannel radio relay and field cable as to provide alternate routes between any two points in the system. Scheduled messenger service is also provided to supplement organic electronic means.

b. *Battle Group Communications Officer.* Battle group communications nets are coordinated, supervised, and controlled by the battle group communications officer. He also supervises the integration of radios of attached transportation units into the battle group nets. The employment of organic means is prescribed in orders and instructions to insure security, control, and optimum utilization.

c. *Transportation Battalion Communications Officer.* Armored carrier unit communications are planned and supervised by the battalion communications officer. In planning the employment of vehicular radio equipment, the communications officer must provide for adequate communication between the transportation battalion and its carrier units to facilitate attachment to supported units. Since the carrier-mounted radios are integrated in the nets of the supported infantry during mechanized operations, coordination must be effected with the battle group communications officer for channels of technical communications between the transportation battalion and its units. Mutual recognition of their respective problems and the inherent capabilities and limitations of organic signal equipment will facilitate this coordination.

26. Supply and Maintenance

The problems of supply and maintenance inherent in the operation of tracked combat vehicles must be met by the carrier commander to successfully perform his assigned missions. Mechanized tactical operations emphasize the importance of their solution. Detailed arrangements for supply and maintenance must be initiated upon the assignment of a carrier support mission. Although unit SOP may cover routine matters, each operation should be checked to insure

timely and adequate supply of critical items and necessary maintenance support. Coordination with supply personnel of the supported unit will obviate unnecessary duplication of effort and promote logistical efficiency. Extended mechanized operations are particularly dependent upon POL. Timely resupply in sufficient quantities is essential to maintain mobility. Effective Class V supply to carrier units is also required to utilize their additional firepower in a supporting role. The first echelon maintenance of tracked vehicles—in other than transportation units a crew rather than a driver effort—must be faithfully and intelligently performed. Second echelon support by the appropriate section of the battalion maintenance platoon must be prompt and efficient. Personnel from the carrier maintenance section with necessary tools and equipment should accompany the carrier unit on its attachment. Operating in conjunction with the supply and maintenance platoon of the supported unit, they can assist in the achievement of maximum vehicle availability and performance for each battle mission. When in an assembly area before the initiation of a mechanized operation, carrier personnel will be primarily concerned with maintenance. Maximum effort will be devoted to completing maintenance checks and repairs that cannot be made in combat. All vehicle engines and suspension systems should be thoroughly inspected. Weapons and signal equipment must be inspected, cleaned, and put in the best possible operating condition. Available battalion maintenance personnel will actively assist drivers in performing assembly area maintenance. The supported commander expects maximum vehicle performance to support his tactical plan. Maintenance failures jeopardize the success of the operation. Maintenance is a command responsibility. To be effective, it must be planned, directed, and supervised at all echelons of command.

27. Training

The training of transportation personnel for the support of infantry in mechanized operations must be well planned, properly organized, comprehensive, strongly motivated, and constantly supervised. The training program for carrier personnel includes many items seemingly unrelated to the transportation function yet having a direct bearing on the successful performance of mechanization missions. No element of this training may be neglected—from the initial basic training of the individual soldier through the field exercises and maneuvers that fit the organization for combat. Basic combat training of the individual may have been completed before his assignment to the unit. However, the unit commander must insure retention of and adherence to the basic principles and techniques covered in this instruction through properly supervised and evaluated concurrent training. Complete training for the carrier unit should include the following, limited in extent only by available time and facilities:

a. Vehicle Driving and Maintenance. Every member of an armored carrier unit should be well qualified in operation and maintenance of the carrier and familiar with its characteristics, capabilities, and limitations. Individual driver training will follow guidelines published in TM 21-301, TM 21-306, and Army Subject Schedule 17-4. The driver should be familiar with the Army system of maintenance so that he may perform his first echelon duties with a knowledge of the limitations imposed on him, as well as the support offered by higher echelons. His training on the vehicle should include instruction in the design and function of its mechanical components, mounting of equipment and stowage, routine maintenance procedures, and extensive driving practice under all conditions. Training in combat driving should be conducted on all available types of terrain. Negotiation of water obstacles and techniques of driving in combat formations should be stressed. Further training in signals, safety rules and regulations, march discipline, and use of field expedients may be integrated with unit training and field exercises. Supervisory personnel must be constantly alert to prevent carelessness and dangerous practices.

b. Communications. Mechanized operations are dependent upon an efficient communications system for effective command and control. Communications training for carrier personnel must insure the reliability of this system down to the lowest echelon equipped with signal facilities. This training must include both operation and maintenance of organic radios. Each member of the carrier unit should be familiar with the characteristics, capabilities, limitations, and operational organization of the various types of signal equipment in the transportation battalion and habitually supported units. Thorough training in radiotelephone procedure and communications security must be given to fully utilize TOE facilities, prevent confusion, and protect tactical operations.

c. Weapons. Individual training includes preparatory marksmanship, mechanical training, and familiarization firing of individual and vehicular weapons. Training in the tactical support use of vehicular weapons should be given before the combined unit training phase and continued during all carrier support exercises. Techniques of selection and occupation of hull defilade positions to support dismounted infantry operations with the carrier-mounted machinegun may be combined with driver training. Maintenance of weapons to insure proper operation will be constantly stressed.

d. Map Reading. The basic characteristics of carrier support operations require maximum utilization of terrain. Although terrain evaluation is preferably based upon ground reconnaissance, the tactical situation often denies the ground to friendly forces before the operation. Military maps and aerial photographs then form the basis for preliminary evaluation. Carrier unit commanders and drivers must have the ability to read and interpret available maps and photos to

select the best possible routes, to meet supported infantry, and to negotiate unfamiliar terrain successfully. Personnel must be thoroughly trained in map and aerial-photograph orientation, conventional signs and symbols, use of grid coordinates, and the determination of direction with or without the compass.

e. Concealment and Camouflage. Training the individual in the use of both natural and artificial material for camouflage is essential to the protection of vehicles and positions. Combat vehicles make a lucrative target and, because of their size and distinctive shape, are difficult to conceal. Expert use of camouflage and skill in the selection of concealed positions is required to prevent enemy observation and fire or compromise of the tactical plan.

f. Pioneering, Demolitions, and Explosives. The operation of mechanized units in forward areas may be dangerously canalized or delayed by damage to bridges or construction of obstacles. Because of its amphibious characteristics, the carrier is restricted by bridge damage less than other vehicles, but its low water speed, sensitivity to currents, and requirement for adequate water approaches make protected crossings over bridges desirable. Carrier personnel should be trained in bridge reconnaissance and field expedients and also in the construction and/or demolition of obstacles using normal organizational equipment.

g. Intelligence Training. Additional intelligence training for carrier personnel will prove advantageous to both the carrier unit and the division. The ability to recognize enemy equipment, particularly armor, at a distance is an asset for self-preservation. Training in the observation and accurate reporting of enemy activity by all mobile forces extends the intelligence capabilities of the division and contributes to its success in combat.

h. Organization and Mission. All carrier unit personnel should know the basic concepts of organization and missions of elements of the infantry division. With the return of mobile warfare and dispersion to counter the effects of nuclear weapons, the coordinated independent actions of small units become increasingly important to the accomplishment of the division mission. Rapid maneuver of mobile forces may hold the key to successful tactics. The relationship between infantry units and their carrier support should be based upon the sound training of individuals in their respective roles and a recognition of the capabilities and limitations of both organizations.

i. Team Training. All individual training outlined above culminates in the training of infantry carrier teams. This training of habitually combined elements of infantry and their supporting transportation units builds mutual confidence and respect, facilitates the rapid mechanization of selected units, and allows commanders to formulate standing operating procedure covering routine matters of command and control, communications, and supply and maintenance.

Team training will be incorporated in the unit training phases of both infantry and transportation units and will be coordinated between the units concerned through designated staff channels. This training should be progressive to insure mastery of fundamentals before more complicated tactical problems are introduced. Fundamentals include procedures and techniques of attachment, command and control of individual carriers, mechanics of mounting and dismounting infantry personnel, and use of carrier communications. This should be followed by training in mechanized combat formations and small unit tactics involving mounted movement to the attack; fire support of dismounted infantry by vehicular weapons; and reorganization, consolidation, and dispersal on the objective. Further combined tactical training will cover tank-infantry operations, mechanized security forces, raids, and withdrawals. Training in river crossings will be stressed for carrier personnel in both individual and unit training phases. The reconnaissance of crossing sites, selection of suitable approaches, and techniques of water operation must be mastered to exploit the amphibious characteristics of the carrier. Infantry personnel must also be thoroughly familiar with the capabilities and limitations of the carrier in water and with applicable safety rules. Armored carrier unit commanders will constantly stress the importance of tactical proficiency in all training of carrier personnel. Tactical training will be based upon FM 7-10, FM 7-40, and FM 7-100 as amplified or modified by instructions or directives of the division commander.

CHAPTER 6

TRANSPORTATION TACTICAL CARRIER UNITS

28. General

The organic transportation battalion with its armored carrier companies can fill normal tactical requirements for limited mechanization of the infantry division. This provides mechanized mobility for the foot elements of either a mobile reserve or a maneuvering force. However, in modern mobile warfare, situations may often exist which call for a degree of mobility beyond the organic capability of the division. These additional requirements may be met by attachment of corps or army tactical carrier units. In the interests of economy, armored carrier units are organic to commands only at those levels and in those quantities justified by habitual requirement. Thus transportation tactical carrier battalions normally are assigned on the basis of one for each corps and two for each army headquarters to be employed as required throughout the army area.

29. Organization and Mission

The transportation tactical carrier battalion consists of a headquarters and headquarters detachment and, normally, four tactical carrier companies. The headquarters and headquarters detachment provides command, control, and administration for its assigned companies and furnishes technical advice and assistance to appropriate commanders. The detachment consists of a battalion headquarters and five functional sections: administration and personnel, operations, communications, supply, and maintenance. Each of the transportation tactical carrier companies is provided with organic personnel, vehicles, and equipment for its administration, mess, supply, and maintenance in addition to a command and operational organization similar to that of the armored carrier company organic to the infantry division. The additional personnel and equipment in the company headquarters and the maintenance platoon enable the tactical carrier company to operate independently for extended periods. This type of company organization also allows greater flexibility in battalion organization. The battalion headquarters and headquarters detachment may serve from three to six companies as required. The mission of the transportation tactical carrier companies is to provide protected tactical mobility for infantry foot elements, either in support of the infantry divisions or in support of special task forces within the corps or field army. Companies of the transportation tactical carrier battalion normally will be attached on a mission basis to the infantry division when required for the support of division tactical operations beyond the capabilities of its organic carrier companies.

30. Employment

The normal employment of transportation tactical carrier companies is based upon the same principles as the employment of divisional armored carrier companies. Carrier reinforcements may be required by the infantry division in accomplishing such assigned missions as the close support of armored units, the rapid seizure of important localities, and the exploitation of successes achieved by mass-destruction weapons and armored, airborne, or other units. Although the infantry division lends itself to the attachment of reinforcing units, certain problems peculiar to mechanization may be faced. Corps and field army tactical carrier units have limited opportunities to train with divisional infantry and therefore may be unfamiliar with the SOP of the supported units. Factors of time and space may also present problems in the employment of these units. To compensate for these and associated problems, careful planning and coordination must be accomplished by the staff of the supported division, by infantry division transportation battalion personnel, and by both the supported and supporting units. Transportation tactical carrier units may also be employed in their respective corps or field army areas to support security forces in the control of partisan and guerrilla activities.

31. Communications

Communication of transportation tactical carrier units normally is by organic radio equipment. All radio equipment is compatible with that of supported infantry to allow complete integration of radio nets at each echelon upon attachment. This enables the infantry commander to meet the increased requirements for communications in mechanized operations without further attachment of signal personnel and equipment. Wire communication equipment is authorized for use in static situations, mainly for interheadquarters and intraheadquarters communication and for ease of integration in the area signal communications system. Wire equipment facilitates voice communication for the receipt and transmission of brief unclassified reports, for the issuance of orders to subordinate units, and for the coordination of headquarters activities. Although radio and wire are the principal communications means, carrier personnel must be trained to use any available means as required. The tactical employment of carrier communications equipment in normal support operations follows the principles and procedures outlined in chapter 5.

32. Supply and Maintenance

The organization of the transportation tactical carrier battalion provides maximum flexibility for supply and maintenance. This flexibility is demanded by the dispersed nature of its operations and the

recurrent changes in attachment and redeployment of its subordinate units.

a. *Battalion Supply and Maintenance.* The headquarters and headquarters detachment is provided with essential supply and maintenance personnel to perform staff, supervisory, and clerical duties only. The S4 has staff responsibility for planning, coordination, and supervision of supply within the battalion. Personnel of the battalion supply section assist him in maintaining proper records, consolidating and forwarding requisitions, and making inspections. The battalion motor maintenance officer acts in a similar staff and supervisory capacity, coordinating motor maintenance activities within the battalion, providing technical advice and assistance to battalion and company commanders, and performing maintenance inspections within the command assisted by enlisted personnel of the maintenance section. Signal supply and maintenance activities are directed and supervised by the battalion communications officer.

b. *Company Supply and Maintenance.* In contrast to the armored carrier company of the infantry division transportation battalion, the tactical carrier company is provided with complete organic mess, supply, and maintenance personnel and equipment necessary for independent operation. This organization is designed to facilitate the attachment of the company to an infantry division or other unit with a minimum of logistical dislocation. The maintenance platoon is further subdivided to form maintenance sections designed to support carrier platoons dispatched on individual support missions. Supply must be coordinated with the supported unit at the earliest opportunity. Basic principles of supply and maintenance outlined for the armored carrier company are equally applicable to the transportation tactical carrier company (par. 26).

33. Training

The training of personnel assigned to transportation tactical carrier units will closely parallel that outlined in paragraph 27 since the normal missions of tactical carrier units and armored carrier companies are identical. However, commanders of tactical carrier units must actively seek opportunities for training with infantry divisions to build the mutual confidence and team proficiency vital to successful mechanized operations. Early familiarization with the standing operating procedures of all divisions and their organic transportation battalions within the operational area of the unit will facilitate attachment, integration, and mission accomplishment of the tactical carrier unit. This training in adaptability should be further extended to include the support of rear area security and defense operations. The very assignment of a specific mission to a transportation tactical carrier unit indicates urgency—a need beyond the capabilities of organic units. Training for such missions must reflect this fact.

APPENDIX

REFERENCES

FM 5-20	Camouflage, Basic Principles and Field Camouflage.
FM 5-22	Camouflage Materials.
FM 5-25	Explosives and Demolitions.
FM 5-36	Route Reconnaissance and Classification.
FM 7-10	Rifle Company, Infantry and Airborne Division Battle Groups.
FM 7-21	Headquarters and Headquarters Company, Infantry Division Battle Group.
FM 7-24	Communication in Infantry and Airborne Divisions.
FM 7-40	Infantry and Airborne Division Battle Groups.
FM 7-100	Infantry Division.
FM 8-35	Transportation of the Sick and Wounded.
FM 9-3	Ordnance Direct Support Service.
FM 11-16	Signal Orders, Records, and Reports.
FM 17-1	Armor Operations; Small Units.
FM 17-20	Armored Infantry Units; Platoon, Company, and Battalion.
FM 19-25	Military Police Traffic Control.
FM 19-90	The Provost Marshal.
FM 21-5	Military Training.
FM 21-6	Techniques of Military Instruction.
FM 21-26	Map Reading.
FM 21-30	Military Symbols.
FM 21-31	Topographic Symbols.
FM 21-60	Visual Signals.
FM 24-18	Field Radio Techniques.
FM 24-20	Field Wire and Field Cable Techniques.
FM 25-10	Motor Transportation, Operations.
FM 30-5	Combat Intelligence.
FM 30-7	Combat Intelligence; Battle Group, Combat Command, and Smaller Units.
FM 30-10	Terrain Intelligence.
FM 31-10	Barriers and Denial Operations.
FM 31-15	Operations Against Irregular Forces.
FM 31-60	River-Crossing Operations.
FM 100-5	Field Service Regulations—Operations.
FM 100-10	Field Service Regulations; Administration.
FM 101-5	Staff Officers Field Manual; Staff Organization and Procedure.

FM 101-10	Staff Officers Field Manual: Organizational, Technical, and Logistical Data. Part I—Unclassified Data.
TM 3-220	Chemical, Biological, and Radiological (CBR) Decontamination.
TM 5-220	Passage of Obstacles Other Than Minefields.
TM 9-8000	Principles of Automotive Vehicles.
TM 21-300	Driver Selection and Training (Wheeled Vehicles).
TM 21-301	Driver Selection, Training, and Supervision; Tracked Vehicles.
TM 21-305	Manual for the Wheeled Vehicle Driver.
TM 21-306	Manual for the Tracked Vehicle Driver.
TM 38-750	The Army Record System and Procedures.
AR 220-60	Field Organizations: Battalions, Battle Groups, Squadrons; General Provisions.
AR 220-70	Field Organizations: Companies; General Provisions.
AR 320-5	Dictionary of United States Army Terms.
AR 320-50	Authorized Abbreviations and Brevity Codes.
TOE 55-46	Headquarters and Headquarters Detachment, Transportation Tactical Carrier Battalion.
TOE 55-47	Transportation Tactical Carrier Company.
TOE 55-75	Infantry Division Transportation Battalion.
TOE 55-76	Headquarters and Headquarters Company, Infantry Division Transportation Battalion.
TOE 55-77	Truck Transport Company, Infantry Division Transportation Battalion.
TOE 55-78	Armored Carrier Company, Infantry Division Transportation Battalion.
Pam 108-1	Index of Army Motion Pictures, Film Strips, Slides, and Phono-recordings.
Pam 310-series	Military Publications Indexes (as applicable).
ASubjSch 17-4	Vehicles, Driving and Maintenance, Tank.

BY ORDER OF THE SECRETARY OF THE ARMY:

G. H. DECKER,
General, United States Army,
Chief of Staff.

Official:

J. C. LAMBERT,
Major General, United States Army,
The Adjutant General.

Distribution:

Active Army:

CofSA (2)	Corps (5)
DCSPER (5)	Div (10)
ACSI (5)	USMA (5)
DCSOPS (10)	USAWC (25)
DCSLOG (10)	USACGSC (175)
ACSRC (2)	USAARMS (20)
CARROTC (2)	USAIS (37)
CRD (2)	USA Ord Sch (30)
CNGB (2)	PMGS (250)
Tech Stf, DA (1)	USATSCH (750)
except CofT (5)	Units org under fol TOE:
USCONARC (10)	55-46 (5)
OS Maj Comd (5)	55-47 (5)
OS Base Comd (2)	55-76 (5)
LOGCOMD (2)	55-77 (5)
MDW (1)	55-78 (5)
Armies (5)	

NG: None.

USAR: Units—same as active Army.

For explanation of abbreviations used, see AR 320-50.

☆ U. S. GOVERNMENT PRINTING OFFICE: 1962—610524

3000021298

FM 55-37 INFANTRY DIVISION TRANSPORTATION BATTALION AND TRANSPORTATION TACTICAL CARRIER UNITS—1962

